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New geological discoveries have intensified the debate over the extinction of the dinosaurs: Page A4.

Philosophers met to discuss how to communicate their concepts to a wider audience: Page A4.

After a tough legislative fight to increase higher-education spending, Mississippi's Governor says the real battle is about to begin: Page A16.

Three judges will hear a plan to eliminate racial segregation in Louisiana's universities: Page A16.

Brimming with advice, educators and scientists are getting ready for a Bush Cabinet and staff: Page A18.

Fund-raising foundations at two universities have come under fire for political activities: Page A21.

Grambling State U. has bucked the nationwide trend of low passing rates by minority students on standardized teacher tests: Page A23.

Memphis State U. has started a program that emphasizes academics for its athletes: Page A27.

A British government proposal to replace most grants to college students with guaranteed loans has run into a flurry of challenges: Page A31.

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Conservative Scholars Call for a Movement to 'Reclaim' Academy

By CAROLYN J. MOONEY

NEW YORK

Frustrated by what they describe as affirmative-action policies that ignore merit, teaching that is tainted by political ideology, and an academic climate that is hostile to conservatives, a group of 300 scholars closed ranks here this month and called for a national movement to "reclaim the academy."

The meeting was the first major assembly of the National Association of Scholars. The 500-member organization was formed a year and a half ago to provide a forum for professors who believe that a "radicalization" of American higher education has led to a decline in academic standards.

Punctuated by lively speeches and horror stories about academic quality and the demise of the core curriculum, the three-day conference seemed to serve as a rallying point for academics who were pleased to encounter so many like-minded colleagues. Many conferees described themselves as conservative—intellectually, politically, or both.

"I had the feeling I died and went to heaven," confessed one professor.

Said Robin Fox, a Rutgers University

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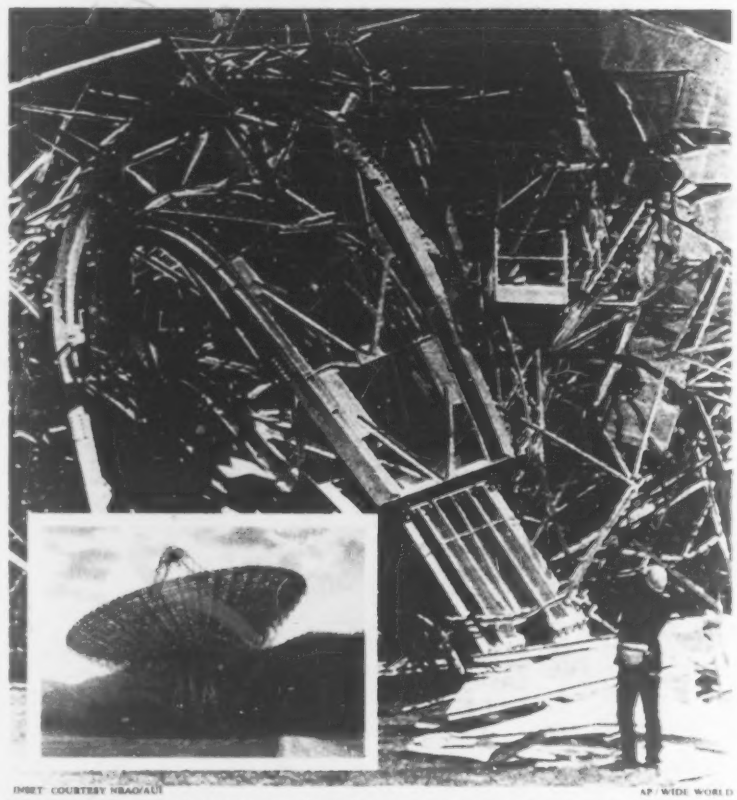
300-FOOT RADIO TELESCOPE COLLAPSES



INSET: COURTESY NRAO/AUI — AP/WIDE WORLD

The Green Bank radio telescope (inset), operated by a consortium of universities, collapsed mysteriously last week, leaving this pile of twisted metal: Page A5.

Officials Assail Use of Test Scores to Rank Colleges, Call on Institutions to Stop Reporting Averages

By JEAN EVANGELAUF

WASHINGTON

The presidents of the American Council on Education and the College Board last week condemned the use of standardized admissions test scores to rank colleges, calling it "a clear misuse which should be curbed."

In an open letter sent to thousands of educators, Robert H. Atwell of the A.C.E. and Donald M. Stewart of the College Board said they felt compelled to speak out because of the proliferation of ratings of colleges by the press. Such ratings, they said, "tend to be based excessively on quantitative indicators such as test scores and by and large do not serve the public well."

Admissions test scores are just one measure of the quality of incoming students, they wrote, adding that the quality of new students, however measured, "does not necessarily say anything useful about the quality of what goes on in a college or university—about student growth, or 'value added' upon graduation."

To stem the abuse of test results, they called on colleges to stop reporting average or median scores. Instead, they urged them to report a "score range" covering the middle 50 per cent of admitted students, saying that showing scores earned by those in the 25th percentile and the 75th percentile would emphasize the diversity of test scores at individual institutions and highlight the overlap of scores among institutions.

"This simple action," they wrote, "could go far towards 'de-hyping' the market for college ratings and related information."

Such a move, they added, could also

Continued on Page A26

Major publishers of standardized tests have pledged to strive to produce tests that are fair, accurate, and unbiased: Page A26.

Security Officials Ask Researchers Not to Make 'Virus' Copies Available

By JUDITH AXLER TURNER

Federal security officials have asked researchers not to share copies of the computer-network virus that attacked 6,000 scientific and academic computers this month.

"This code could readily be modified to be used against other systems," said Eugene Myers, chief of the secure-architectures branch of the National Computer Security Center, a division of the National Security Agency.

The agency has brought pressure on re-

Continued on Page A12

Gorbachev Hints at Shortening Military Service Amid Broad University Discontent Over Draft

By PATRICIA LEGRAS

MOSCOW

Indications are growing that the Soviet Union wants to change its policy on the military draft, which since 1982 has required 18-year-old male students to interrupt their university studies for two years in the army or three years in the navy.

President Mikhail S. Gorbachev has hinted that the length of mandatory service would be reduced, and a senior army officer has suggested that a smaller army, composed mainly of professionals, might be more appropriate to the country's present needs.

Western sources estimate that the Soviet Army has 5 million troops.

Mr. Gorbachev, appearing at a meeting of the *Komsomol*, or Young Communist League, said: "In general, we must discuss the question of army service and call-up. I believe the length of service will be considered, and it could be changed."

His comment came after a teen-ager at the meeting asked whether the length of

Continued on Page A32

MARGINALIA

From *Atlantic Sun*, the student weekly at Florida Atlantic University:

"If there is one thing that FAU lacks that cannot be blamed on the administration, it is poor attendance at the sporting events on campus."

Build a bigger stadium, is our suggestion.

■

Headline in *The Lantern*, the daily at the Ohio State University:

ROTC HOLDS
REPELLING CLINIC TODAY

We've been to *lots* of those, in our time.

■

From the University of Toronto *Bulletin*:

"Training our own majors and specialists and providing for undergraduate general education are not necessarily incompatible goals, but it is difficult to accommodate both. One answer may be to abolish the three-year degree in order to make room for both intensive training in a discipline and a carefully constructed breath requirement."

It's been a lung time coming.

■

From *Mosaic*, a newsletter from the University of Notre Dame libraries:

"The meeting was called to order at 2:00 p.m. in the faculty lounge by the Director of Libraries, Robert C. Miller. He announced that the agenda for the afternoon was busy. . . ."

We'll call it back, later.

■

With hopes high, we bought a software program called Grammatik III, which promised to "proofread reports, memos, and letters for mistakes in grammar, style, usage, spelling, and more."

Our hopes were high, that is, until we came across this paragraph early in the accompanying manual:

"If only want to see the problems Grammatik III finds, and don't want a corrected or marked copy, then you can check in *Read only* mode. Grammatik III will only read the original file and show you the potential problems it find, but won't make any changes or create any marked or corrected copy."

Can we have our money back?

■

Letter to the editor of *Maine*, a magazine from the University of Maine Alumni Association:

"The Spring '88 issue of MAINE contained an article entitled, 'Change the Stein Song?' Please add one more angry protest to Professor Markowitsky's proposal.

"I would assume he would also like to change the words of the Star Bangled Banner. . . ."

We kind of like them the way they are.

—C.G.

In Brief

New Campus Is Approved for Cal. State System

Trustees of the California State University system last week approved a plan to open a new campus in the northern San Diego County area. It would become the system's 20th campus and the first to be opened in 23 years.

Under the plan, an off-campus branch of San Diego State University that was started in 1979 in San Marcos would be converted into an independent campus on a 300-acre site. It would open in 1992. The plan is subject to the approval of the California Postsecondary Education Commission and the state Legislature.

The new campus was prompted by extensive growth in northern San Diego County. That growth has contributed to overcrowding at San Diego State University, which, with 35,000 students, is now the system's largest campus.

$6-Million in Cuts Sought at Fairleigh Dickinson U.

The president of Fairleigh Dickinson University has proposed cutting academic programs, selling property, and eliminating some faculty and administrative positions to offset an expected $6-million budget deficit next year.

If the university's Board of Trustees approves the plan next month, a total of 14 programs on the university's three campuses will be phased out beginning next fall, said Alice Olick, a university spokeswoman.

Old homes on the periphery of the Rutherford campus—now used as university administrative offices—will be sold, Ms. Olick said. The faculty and administrative positions affected by the cuts will be eliminated primarily through attrition, she added.

Ms. Olick said the budget deficit had resulted from the university's spending on environmental cleanups and new fire-safety measures, and its decision to write off more than $1-million in uncollected student loans.

SAKHAROV SIGNS IN AT LAST

NATIONAL ACADEMY OF SCIENCES

With his stepdaughter looking on, Andrei D. Sakharov signs the register of the National Academy of Sciences, to which he was elected in 1973. A space had been held open for him since then.

Georgia Tech Is Allowed to Restart Reactor

The Nuclear Regulatory Commission last week gave permission to the Georgia Institute of Technology to start up a campus nuclear reactor that had been shut down this year because of violations of safety procedures.

In January the commission stopped all experiments at the reactor involving the deliberate exposure of materials to radiation. The commission said then that an unannounced inspection of the reactor's records had turned up evidence of an incident in which radiation had been improperly released. The university responded by closing down the reactor completely, by reviewing safety procedures, and by reassessing the role of the reactor in campus research.

Last week the staff of the commission's Atlanta office, while allowing the institute to restart the reactor, also said they were proposing a $5,000 fine for the breakdown in management of the reactor that they said had occurred before the reactor's shutdown. The poor management, the commission staff said, had led to a failure to follow safe and proper procedures at the reactor.

Georgia Tech's President John P. Crecine said the institute did not plan to appeal the fine proposed by the regional office.

18 at Northwestern Jailed in Protest of CIA

Eleven students were among 18 people arrested at Northwestern University last week for illegally protesting a visit by recruiters for the Central Intelligence Agency.

The protest, which involved some 60 people, took place outside Scott Hall, where the university's career-placement center is housed. Evanston, Ill., police and Northwestern security officers made the arrests after protesters ignored orders to stop blocking an entrance to the building.

Police charged the 18 with disorderly conduct and disobeying a police officer and released them on their own recognizance.

About 30 students held a counter-demonstration nearby to promote free speech on the campus and free access to recruiters.

U. of Washington Sets Arts Requirement

Beginning in 1992, the University of Washington will require entering freshmen to have completed at least a half year of high-school courses in the fine or performing arts.

Arthur Grossman, associate dean in the university's College of Arts and Sciences, said the requirement would send a message to high schools that the arts are not peripheral to education.

University officials said the requirement would not add to the number of courses that students must take to graduate.

Nader Unit Seeks Disclosure of Harvard Professors' Corporate Ties

CAMBRIDGE, MASS.

A watchdog organization sponsored by Ralph Nader published two reports last week that criticize Harvard University for keeping faculty members' ties with business and government secret.

The authors argue that the public needs to know about such relationships to understand the conflicting interests at work in professors' research and teaching.

"Scholars, Inc.: Harvard Academics in Service of Industry and Government" and "The New Classified Research: Corporate Sponsored Biomedical Research and the Reign of Secrecy at Harvard University" were released by Harvard Watch, a two-person team of Harvard seniors, Jaron Bourke and Robert Weissman. Harvard Watch was formed by Mr. Nader, the consumer advocate.

"Scholars, Inc.," by Mr. Weissman, contends that Harvard academics hold 38 positions on the boards of directors of Fortune 500 companies and have more than 60 ties to the biotechnology industry. At the business school, he says, at least 110 of the 180 faculty members have a total of 500 corporate connections.

University Called Negligent

"Faculty who sit on the boards of a half dozen companies or are involved in extensive consulting relationships are inevitably strapped for time," he writes. "Professorships, though, are full-time jobs, for which professors receive full-time pay."

Mr. Weissman also says that as professors become more dependent on "outside patrons," they become less likely to view their research with a detached and critical eye.

In "The New Classified Research," Mr. Bourke condemns Harvard for failing to disclose information about corporate-sponsored biomedical research conducted by faculty members and for failing to report fraud, wastefulness, and ethical misconduct.

TERRY ROSSMASLIN

Ralph Nader: As a Harvard alumnus he feels he has a duty to "try to help free it of its corporate entanglements."

The findings of both reports, Mr. Bourke said in an interview, suggest that Harvard is negligent in carrying out its responsibilities to the general public. "As the university becomes more closely aligned with industry, the university is transformed," he said. "That's not in and of itself bad, but it is wrong that this transformation is taking place in secret."

Mr. Nader, the consumer advocate, is a 1958 graduate of the Harvard Law School. He said he had chosen to focus on Harvard because, as an alumnus, he felt he had a duty to give something back to Harvard, to "try to help free it of its corporate entanglements."

Daniel Steiner, vice-president and general counsel at Harvard, said it was wrong to assume that professors with corporate ties would betray standards. Harvard requires professors with financial interests in their research to disclose those ties, he said.

"Scholars, Inc." and "The New Classified Research" may be ordered, for $10 and $6 respectively, from Harvard Watch, Mather House 153, Harvard College, Cambridge, Mass. 02138.

—ELIZABETH GREENE

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In Federal Agencies

American Indian education. The Education Department has proposed rules to carry out changes in the general provisions of the Indian Education Act and Indian education discretionary and formula grant programs, as required by the Indian Education Act of 1988. Comments from the public must be received by January 17 (*Federal Register*, November 16, Pages 46,404-14)

Data collection. The following agencies have submitted lists of their data-collection requests to the Office of Management and Budget for review: Agency for International Development (*Federal Register*, November 9, Page 45,390); Agriculture Department (*Federal Register*, November 9, Page 45,309; November 16, Page 46,100); Defense Department (*Federal Register*, November 10, Page 45,532); Education Department (*Federal Register*, November 9, Pages 45,377-8); Environmental Protection Agency (*Federal Register*, November 10, Pages 45,544-5; November 14, Pages 45,818-9; November 16, Page 46,111); Veterans Administration (*Federal Register*, November 9, Pages 45,417-8; November 10, Page 45,654; November 15, Pages 46,011-2)

Employee benefits. The Internal Revenue Service has proposed rules to guide the administration of pension, profit-sharing, and stock-bonus plans that meet anti-bias requirements. Comments from the public must be received by January 17 (*Federal Register*, November 15, Pages 45,917-47)

Federal-aid recipients. The Office of Management and Budget has proposed changing some administrative requirements for grants and cooperative agreements. The rules would establish the same government-wide regulations for managing grants for both for-profit organizations and non-profit organizations, including colleges and hospitals. Grants to non-profit groups currently are administered under separate guidelines from those for grants to for-profit organizations. Comments from the public must be received by January 3 (*Federal Register*, November 4, Pages 44,710-852)

Foreign-language programs. The Education Department has proposed rules to guide the administration of the Direct Individual Foreign Language and Area Studies Fellowships Program, which supports fellowships to graduate students. Comments from the public must be received by January 3 (*Federal Register*, November 16, Pages 46,416-8).

Geriatric medicine. The Public Health Service has proposed rules to guide the administration of the Grants for Faculty Training Projects in Geriatric Medicine and Dentistry, as required by the Public Health Service Amendments of 1987. Comments from the public must be received by January 3 (*Federal Register*, November 3, Pages 44,496-502)

Health-education loans. The Department of Health and Human Services has proposed rules to carry out changes in the eligibility requirements for people applying for support under the Health Education Assistance Loan program, as required by the Health Professions Training Assistance Act of 1985. Comments from the public must be received by January 6 (*Federal Register*, November 7, Pages 44,933-5)

International exchanges. The United States Information Agency has issued new interim rules to carry out the Agreement for Facilitating the International Circulation of Visual and Auditory Materials of an Education, Scientific, and Cultural Character. The rules are intended to replace interim rules that were declared unconstitutional. Comments from the public must be received by January 9 (*Federal Register*, November 8, Pages 45,079-80)

Magnet schools. The Education Department has proposed various changes in the Magnet Schools Assistance Program to allow special consideration for grant applications from elementary and secondary schools operating collaborative programs with colleges and universities. The rules are required by the Augustus F. Hawkins-Robert T. Stafford Elementary and Secondary School Improvement Amendments of 1988. Comments from the public must be received by December 29 (*Federal Register*, November 14, Pages 45,874-6)

Rehabilitation research. The Education Department has proposed the priorities that will be used to allot money in academic 1989-90 for various rehabilitation research and training programs of the National Institute on Disability and Rehabilitation Research. Comments from the public must be received by December 15 (*Federal Register*, November 15, Pages 46,062-70)

Scientific misconduct. The Public Health Service has extended the period for comments from the public on proposed rules to protect against misconduct in science and research. The new date by which comments must be received is December 19 (*Federal Register*, November 14, Pages 45,781-2)

Special education. The Education Department has issued final changes in rules used to guide the administration of the Training Personnel for the Education of the Handicapped Program, as required by the Education of the Handicapped Act Amendments of 1986 (*Federal Register*, November 10, Pages 45,730-8)

Student-loan defaults. The Education Department has requested comments from the public on the agency's proposed regulations intended to reduce the number and rate of defaults on Stafford Student Loans. Comments must be received by December 2 (*Federal Register*, November 3, Pages 44,514-5)

Teacher education. The Education Department has proposed rules to carry out changes in the Fund for the Improvement and Reform of Schools and Teaching, as required by the Augustus F. Hawkins-Robert T. Stafford Elementary and Secondary School Improvement Amendments of 1988. Comments from the public must be received by December 19 (*Federal Register*, November 3, Pages 44,578-83)

Teacher education. The Education Department has proposed various changes in the Christa McAuliffe Fellowship Program, including the establishment of both a minimum award for fellows and a definition of the responsibilities of those persons (*Federal Register*, November 14, Pages 46,072-3)

Federal Phone Numbers

(All are in Area Code 202.)

To order documents from the Government Printing Office: 783-3238.

To ascertain whether the President has signed a specific bill: 456-2226.

To contact the White House: 456-1414.

To contact the Office of Management and Budget public affairs office: 395-3080.

To contact the Department of Agriculture public affairs office: 447-7454.

To contact the Department of Defense public affairs office: 697-9312; personnel locator: 697-1759.

To contact the Department of Education public information office: 732-4576; personnel locator: 245-3192.

To contact the Department of Health and Human Services public information office: 245-6343; personnel locator: 245-6296.

To contact the National Science Foundation public information office: 357-9498; personnel locator: 357-9859.

To contact the National Endowment for the Humanities public information office: 786-0438; personnel locator: 786-0415.

To contact the National Endowment for the Arts public information office: 634-6033.

WASHINGTON UPDATE

Savings Bonds for College Costs; Rules for Grant Recipients

President Reagan has signed a bill that gives tax breaks to parents who buy U.S. Savings Bonds to pay for their children's college education. The legislation was designed to correct errors in a 1986 tax-reform bill but included hundreds of provisions unrelated to such mistakes. The bill also will partially reinstate a tax break for employers who provide tuition benefits to their workers, and will make permanent a tax break on aid to graduate students that is not compensation for teaching and research.

Under the new law, interest earned on U.S. Savings Bonds will be exempt from income tax if the bonds are used to pay for college. The full exemption will be available to couples who earn $60,000 a year or less and to single parents with incomes of $40,000 or less. Benefits will taper off above those income levels.

The bond program is to begin in 1990. The provision involving tuition benefits provided by employers extends a tax break that expired last year. It will allow employers to pay up to $5,250 a year tax-free for a worker's undergraduate education.

Until last year, the tuition benefit was available to graduate students, also. Many college officials have complained that leaving graduate students out will discourage people from obtaining advanced degrees in business and engineering.

—ROBIN WILSON

Federal agencies have come together to propose a single set of regulations for administering federal grants throughout the government.

But individual agencies have suggested so many exceptions and alternatives to the joint proposal that the total package is as much a hodgepodge as the regulations that the agencies already have in place, college officials say. The proposal—which would govern rules for all grant recipients, not just colleges—was published on November 4 in the *Federal Register*. In particular, the proposed rules would allow agencies to decide whether to follow special procedures to reduce paperwork in managing grants for academic research to colleges and universities.

The simplified procedures were tested in a demonstration project that involved several federal agencies and universities in Florida. The experiment proved so successful that the White House Office of Management and Budget this year encouraged all federal agencies to use some of the simpler methods tested in Florida.

The special rules, for example, would allow researchers to buy equipment and hire people for up to 90 days before they are officially covered by a grant without having to get federal permission first, as many agencies have required in the past.

Higher-education officials support such changes. But some say that because the simplified procedures would be optional rather than required, their implementation could create just the kind of unnecessary paperwork and delays that the proposed rules are supposed to eliminate. Universities would have to keep track of which grants were covered by the special set of rules from the Florida test and which were not.

One federal official, who asked not to be identified, said the process of designing government-wide regulations was still in flux, and the official urged higher-education officials to let federal agencies know if they think the final regulations should include a stronger endorsement of the more liberal rules for academic research.

—COLLEEN CORDES

FACT FILE: The Top 100 Institutions in Total Research-and-Development Spending for Fiscal 1987

	U.S. funds for research & development		Total funds for research & development	
	Amount	Rank	Amount	Rank
Johns Hopkins U. *	$476,290,000	1	$510,896,000	1
Massachusetts Inst. of Technology †	206,785,000	2	264,416,000	2
U. of Wisconsin, Madison	149,665,000	4	254,493,000	3
Cornell U. †	144,604,000	6	244,840,000	4
Stanford U. †	204,386,000	3	240,885,000	5
U. of Michigan	137,558,000	8	224,890,000	6
U. of Minnesota	109,003,000	15	222,381,000	7
Texas A&M U.	75,432,000	26	219,853,000	8
U. of California, Los Angeles	130,763,000	10	188,831,000	9
U. of Illinois, Urbana-Champaign	104,420,000	17	188,682,000	10
U. of Washington	145,184,000	5	187,062,000	11
U. of California, San Diego	142,751,000	7	183,047,000	12
U. of California, Berkeley	108,828,000	16	175,273,000	13
U. of California, San Francisco	117,302,000	12	169,436,000	14
Harvard U.	119,955,000	11	169,074,000	15
U. of Texas, Austin	88,395,000	20	168,931,000	16
Pennsylvania State U.	94,326,000	19	165,841,000	17
U. of Pennsylvania	111,185,000	14	158,334,000	18
Columbia U.	133,018,000	9	149,904,000	19
Yale U.	116,943,000	13	145,818,000	20
U. of California, Davis	56,622,000	36	143,798,000	21
U. of Arizona	65,024,000	30	138,726,000	22
U. of Southern California	101,749,000	18	134,995,000	23
U. of Maryland, College Park	55,194,000	38	126,239,000	24
U. of Georgia	35,261,000	65	124,442,000	25
Ohio State U.	58,555,000	34	123,246,000	26
Georgia Inst. of Technology	63,132,000	31	120,342,000	27
U. of Colorado	83,144,000	21	112,276,000	28
Michigan State U.	44,989,000	50	111,810,000	29
Purdue U.	56,302,000	37	107,131,000	30
U. of Florida	49,311,000	46	104,245,000	31
Washington U.	77,757,000	23	103,419,000	32
North Carolina State U.	33,662,000	68	102,647,000	33
Louisiana State U.	31,089,000	75	102,070,000	34
U. of Rochester †	80,322,000	22	101,598,000	35
New York U.	76,126,000	24	98,924,000	36
Rutgers U.	27,178,000	79	94,555,000	37
U. of North Carolina, Chapel Hill	72,529,000	27	93,754,000	38
U. of Chicago †	75,889,000	25	91,879,000	39
Baylor College of Medicine	49,834,000	44	90,179,000	40
Duke U.	67,925,000	29	89,556,000	41
Northwestern U.	49,286,000	47	88,920,000	42
California Inst. of Technology †	71,086,000	28	86,565,000	43
U. of Pittsburgh	62,060,000	32	84,183,000	44
Carnegie Mellon U.	53,817,000	41	83,763,000	45
U. of Connecticut	36,884,000	63	81,575,000	46
Virginia Polytechnic Inst. & State U.	32,129,000	70	80,552,000	47
U. of Massachusetts	44,256,000	51	79,814,000	48
Oregon State U.	46,774,000	48	79,715,000	49
U. of Iowa	57,159,000	35	79,090,000	50
Iowa State U. †	19,682,000	97	78,351,000	51
Yeshiva U.	59,768,000	33	73,773,000	52
U. of Alabama, Birmingham	$54,534,000	39	$72,692,000	53
Case Western Reserve U.	53,580,000	42	70,850,000	54
State U. of New York, Buffalo	51,212,000	43	70,474,000	55
U. of Utah	54,226,000	40	68,194,000	56
Rockefeller U.	37,983,000	60	66,760,000	57
U. of Texas System Cancer Center	22,162,000	89	65,417,000	58
Indiana U.	44,211,000	52	65,341,000	59
U. of Miami	38,052,000	59	65,158,000	60
Princeton U.	43,505,000	53	65,089,000	61
U. of Illinois, Chicago	34,570,000	66	64,701,000	62
U. of Virginia	41,267,000	55	63,861,000	63
U. of Texas Health Science Center, Dallas	45,382,000	49	62,907,000	64
U. of Missouri, Columbia	20,250,000	95	61,212,000	65
U. of Tennessee, Knoxville	28,752,000	78	60,096,000	66
Emory U.	36,698,000	64	58,889,000	67
New Mexico State U.	37,904,000	61	58,672,000	68
Boston U.	49,406,000	45	58,299,000	69
U. of Hawaii, Manoa	34,472,000	67	57,345,000	70
U. of Nebraska, Lincoln	24,512,000	84	56,066,000	71
U. of Kentucky	26,261,000	80	55,042,000	72
State U. of New York, Stony Brook	39,445,000	56	54,219,000	73
U. of Cincinnati	32,044,000	71	53,804,000	74
Colorado State U.	38,961,000	57	52,619,000	75
U. of California, Irvine	38,138,000	58	51,691,000	76
U. of California, Riverside	15,001,000	108	51,158,000	77
U. of Kansas	22,941,000	86	50,603,000	78
Washington State U.	21,274,000	94	48,865,000	79
Woods Hole Oceanographic Institute	42,239,000	54	48,061,000	80
Auburn U.	13,446,000	117	48,045,000	81
Oklahoma State U.	9,575,000	138	47,420,000	82
Tufts U.	37,148,000	62	46,497,000	83
Clemson U.	9,016,000	139	46,495,000	84
Florida State U.	21,416,000	93	46,420,000	85
City U. of New York, Mount Sinai School of Medicine	31,024,000	76	46,137,000	86
U. of Maryland, Baltimore	26,244,000	81	45,523,000	87
U. of Oklahoma	14,453,000	111	45,350,000	88
U. of New Mexico	29,096,000	77	45,333,000	89
Vanderbilt U.	31,343,000	74	43,589,000	90
U. of California, Santa Barbara	32,856,000	69	42,704,000	91
Utah State U.	22,109,000	90	41,343,000	92
Virginia Commonwealth U.	31,612,000	73	41,016,000	93
Kansas State U.	13,270,000	118	40,587,000	94
Mississippi State U.	12,387,000	125	40,405,000	95
Wayne State U.	16,927,000	103	39,335,000	96
Arizona State U.	16,009,000	114	38,763,000	97
Tulane U.	21,836,000	92	38,393,000	98
Brown U.	32,024,000	72	38,110,000	99
Georgetown U.	24,477,000	85	35,981,000	100
Total, 100 institutions	**$6,184,538,000**		**$9,880,550,000**	
Total, all institutions	**$7,325,710,000**		**$12,081,531,000**	

Note: Figures cover only research-and-development expenditures in science and engineering, and exclude spending in such disciplines as the arts, education, the humanities, law, and physical education.
Because some institutions have developed new methods to report their research expenditures more accurately, comparisons with earlier years may not be appropriate.

* Includes the Applied Physics Laboratory with $342 million in total and $338 million in federally financed research-and-development expenditures.
† Excludes research expenditures at university-associated federally funded research-and-development centers.

SOURCE: NATIONAL SCIENCE FOUNDATION